Nicky Shaw Public Understanding of Mathematics Lecture

INSTABILITIES AND CATASTROPHES

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When things become unstable, they often collapse and go bang. In the natural world, a massive cold star can collapse to form a black hole in space. During the lecture we shall watch the dramatic collapse of the Tacoma Narrows suspension bridge as men and vehicles struggle to get off. Nearer to home we will see how the Millennium Bridge decided to wobble when people first walked on it.

Concepts of stability and instability are indeed central to all the mathematical sciences. With numerous experimental demonstrations, this informal talk gives an overview of a wide variety of instability phenomena. A prize will be given to anyone who correctly predicts the floating behaviour of a wooden log in a tank of water! The mathematics of bifurcation theory and catastrophe theory supply a unified view of all these diverse instabilities, and help us predict how and when a system will go crash, bang or wallop!

Level: suggested age range 16+

Thursday 11th November 2004, 5–6 p.m.
Centre for Mathematical Sciences, Clarkson Road, Cambridge

Admission to the lecture is free but by ticket only – for tickets please contact
Alison Boyle, Millennium Mathematics Project, Centre for Mathematical Sciences, Wilberforce Road,
Cambridge CB3 0WA (01223 766839) or email mmp@maths.cam.ac.uk

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